- 1 -

TECH CENTER 1600/2900

SEQUENCE LISTING

<110> Luiten, Rosalie Boon-Falleur, Thierry van der Bruggen, Pierre Stroobant, Vincent Demotte\ Nathalie Schultz,\ Erwin

<120> MAGE ANTIGENIC PEPTIDES WHICH BIND HLA-B35 AND HLA-B44

<130> L00461/70104

<140> US 09/766,889 15 <141> 2001-01-19

> <150> US 60/177,242 <151> 2000-01-20

20 <150> US 60/243,212 <151> 2000-10-25

<160> 59

<170> PatentIn 3.1

<210> 1 <211> 930 <212> DNA

<213> Homo sapiens

atgtctcttg agcagaggag tctgcactgc aagccttgagg aagcccttga ggcccaacaa gaggccctgg gcctggtgtg tgtgcaggct gccadctcct cctcctctcc tctggtcctg 60 35 ggcaccetgg aggaggtgcc cactgetggg tcaacagatc etceccagag tectcaggga 120 gcctccgcct ttcccactac catcaacttc actcgacaga ggcaacccag tgagggttcc 180 agcagecgtg aagaggaggg gecaageace tettgtatee tggagteett gtteegagea 240 gtaatcacta agaaggtggc tgatttggtt ggttttctgc tcctcaaata tcgagccagg 300 gagccagtca caaaggcaga aatgctggag agtgtcatda aaaattacaa gcactgtttt 360 cetgagatet teggeaaage etetgagtee ttgeagetgag tetttggeat tgaegtgaag 40 420 gaagcagacc ccaccggcca ctcctatgtc cttgtcacct gcctaggtct ctcctatgat 480 ggcctgctgg gtgataatca gatcatgccc aagacaggct \tcctgataat tgtcctggtc 540 atgattgcaa tggagggcgg ccatgctcct gaggaggaaa tctggggagga gctgagtgtg 600 atggaggtgt atgatgggag ggagcacagt gcctatgggg agcccaggaa gctgctcacc 660 caagatttgg tgcaggaaaa gtacctggag taccggcagg tqccggacag tgatcccgca 45 720 cgctatgagt tcctgtgggg tccaagggcc ctcgctgaaa ccagctatgt gaaagtcctt 780 gagtatgtga tcaaggtcag tgcaagagtt cgctttttct tcccatccct gcgtgaagca 840 gctttgagag aggaggaaga gggagtctga 900 930

50 <210> 2 <211> 309

<212> PRT

<213> Homo sapiens

55 <400> 2 Met Ser Leu Glu Gln Arg Ser Leu His Cys Lys Pro Glu Glu Ala Leu Glu Ala Gln Glu Ala Leu Gly Leu Val Cys Val Gln Ala Ala Thr Ser Ser Ser Pro Leu Val Leu Gly Thr Leu Glu Glu Val Pro Thr 60

Ala Gly Ser Thr Asp Pro Pro Gln Ser Pro Gln Gly Ala Ser Ala Phe

30

10

	500	
	Pro Thr Thr Ile Asn Phe Thr Arg Gln Arg Gln Pro Ser Glu Gly Ser	
01 , 5	Ser Ser Arg Glu Glu Glu Gly Pro Ser Thr Ser Cys Ile Leu Glu Ser	
15 Jul	Leu Phe Arg Ala Val Ile Thr Lys Lys Val Ala Asp Leu Val Gly Phe	
MAC		
	Leu Leu Lys Tyr Arg Ala Arg Glu Pro Val Thr Lys Ala Glu Met	
10	Leu Glu \$er Val Ile Lys Asn Tyr Lys His Cys Phe Pro Clu Ile Phe	
	Gly Lys A a Ser Glu Ser Leu Gln Leu Val Phe Gly Ile Asp Val Lys	
15	Glu Ala Asp Pro Thr Gly His Ser Tyr Val Leu Val Thr Cys Leu Gly	
13		
	Leu Ser Tyr Asp Gly Leu Leu Gly Asp Asn Gln Ile Met Pro Lys Thr	
	Gly Phe Leu Ile Ile Val Leu Val Met Ile Ala Met Gly Gly Win	
20		
	Ala Pro Glu Glu Glu Ile Trp Glu Glu Leu Ser Val Met Glu Val Tyr 210 215 220	
101	Asp Gly Arg Glu \His Ser Ala Tyr Gly Glu Pro Arg Lys Leu Leu Thr	
(Val)	Gln Asp Leu Val Gln Glu Lys Tyr Leu Glu Tyr Arg Gln Val Pro Asp	
7 75		
$^{\prime\prime}$ $^{\prime\prime}$	Ser Asp Pro Ala Art Tyr Glu Phe Leu Trp Gly Pro Arg Ala Leu Ala	
(Glu Thr Ser Tyr Val Lys Val Leu Glu Tyr Val Ile Lys Val Ser Ala	
30		
20	Arg Val Arg Phe Phe Pro Ser Leu Arg Glu Ala Ala Leu Arg Glu 290 295	
	Glu Glu Gly Val	
	305	
35	<210> 3	
	<211> 31	
	<212> DNA <213> Homo sapiens	
40		
40	<400> 3 \	
	aaactgcaga tgtctcttga gcagaggagt c	31
	<210> 4	
45	<211> 30 <212> DNA	
	<213> Homo sapiens	
	<400> 4 aaactgcagt cagactccct cttcctcctc	
50	\	30
	<210> 5 <211> 12	
	<211> 12 <212> PRT	
55	<213> Homo sapiens	
33	<400> 5	
	Glu Ala Asp Pro Thr Gly His Ser Tyr Val Leu Val	
	1 5 10 Val	
60	<210> 6	
	<211> 10	
	<212> PRT	
	· ·	

```
<2\13> Homo sapiens
               <400>
        Asp Pro Thr Gly His Ser Tyr Val Leu Val
              <210>
              <211> 9
              <212> PRT
              <213> Homo sapiens
              <400> 7
        Asp Pro Thr Gly His Ser Tyr Val Leu
  15
              <210> 8
              <211> 9
              <212> PRT
              <213> Homo sapiens
  20
              <400> 8
       Glu Ala Asp Pro Thr Gly His Ser Tyr
              <210> 9
              <211> 10
             <212> PRT
             <213> Homo sapiens
 30
             <400> 9
       Lys Glu Ala Asp Pro Thr Gly His Ser Tyr
             <210> 10
 35
             <211> 8
             <212> PRT
             <213> Homo sapiens
             <400> 10
      Ala Asp Pro Thr Gly His Ser Tyr
 40
             <210> 11
            <211> 72
45
            <212> DNA
            <213> Homo sapiens
            <400> 11
      atgtctgagt ccttgcagct ggtctttggc attgacgtga aggaagcaga ccccaccggc
50
      cactcctatt ga
                                                                                60
                                                                                72
            <210> 12
            <211> 23
            <212> PRT
55
            <213> Homo sapiens
            <400> 12
     Met Ser Glu Ser Leu Gln Leu Val Phe Gly Ile Asp Val Lys Glu Ala
60
     Asp Pro Thr Gly His Ser Tyr
                  20
```

```
<2\10> 13
               <211> 33
               <21$> DNA
               <213 Homo sapiens
   5
               <400 13
        atggaagcag accccaccgg ccactcctat tga
                                                                                   33
               <210>\14
               <211> 10
               <212> RT
              <213> Homo sapiens
              <400> 14\
        Met Glu Ala Asp\ Pro Thr Gly His Ser Tyr
  15
              <210> 15
              <211> 30
  20
              <212> DNA
              <213> Homo sapiens
              <400> 15
       atggcagacc ccaccggcda ctcctattga
                                                                                  30
              <210> 16
             <211> 9
             <212> PRT
             <213> Homo sapiehs
 30
             <400> 16
       Met Ala Asp Pro Thr Gly \His Ser Tyr
 35
             <210> 17
             <211> 9
             <212> PRT
             <213> Homo sapiens
 40
             <400> 17
      Ser Ala Tyr Gly Glu Pro Arg Lys Leu
             <210> 18
45
             <211> 9
             <212> PRT
            <213> Homo sapiens
            <400> 18
50
      Glu Val Asp Pro Ile Gly His Leu Tyx
            <210> 19
            <211> 9
55
            <212> PRT
            <213> Homo sapiens
            <400> 19
      Phe Leu Trp Gly Pro Arg Ala Leu Val
60
            <210> 20
```

```
<211> 10
               <212> PRT
               <213> Homo sapiens
   5
               k400> 20
        Met Glu Val Asp Pro Ile Gly His Leu Tyr
               ₹210> 21
  10
               <211> 9
              <$12> PRT
              <213> Homo sapiens
              <400>21
        Ala Ala Arg Ala Val Phe Leu Ala Leu
          1
              <21d> 22
              <211 ≥ 8
              <212≯ PRT
              <213≯ Homo sapiens
              <400>
                    22
       Tyr Arg Pro Arg Pro Arg Tyr
 25
         1
             <210> 23
             <211> 10
             <212> PRT
 30
             <213> Homo sapiens
             <400> 23
       Ser Pro Ser Ser Akn Arg Ile Arg Asn Thr
 35
             <210> 24
             <211> 9
             <212> PRT
             <213> Homo sapi\ens
 40
             <400> 24
      Val Leu Pro Asp Val Phe Ile Arg Cys
45
            <210> 25
            <211> 10
            <212> PRT
            <213> Homo sapiens
50
            <400> 25
      Val Leu Pro Asp Val Phe Ile Arg Cys Val
            <210> 26
55
            <211> 9
            <212> PRT
            <213> Homo sapiens
            <400> 26
     Glu Glu Lys Leu Ile Val Val Leu Phe
60
```

```
<210> 27
               211> 9
                212> PRT
               213> Homo sapiens
   5
               < 400 > 27
        Glu Glu Lys Leu Ser Val Val Leu Phe
  10
               <210> 28
               <211> 10
               <21/2> PRT
               <21\beta> Homo sapiens
  15
              <400> 28
        Ala Cys Asp Pro His Ser Gly His Phe Val
              <210>\ 29
  20
              <211>\10
              <212>\PRT
              <213> Homo sapiens
              <400> 29
       Ala Arg Asp Pro His Ser Gly His Phe Val
              <210> 3d
              <211> 9
              <212> PRT
              <213> Homo sapiens
             <400> 30
       Ser Tyr Leu Asp\Ser Gly Ile His Phe
 35
             <210> 31
             <211> 9
             <212> PRT
 40
             <213> Homo sapiens
             <400> 31
      Ser Tyr Leu Asp Ser Cly Ile His Ser
45
             <210> 32
             <211> 9
             <212> PRT
             <213> Homo sapiens
50
            <400> 32
      Met Leu Leu Ala Val Leu Ty Cys Leu
55
            <210> 33
            <211> 9
            <212> PRT
            <213> Homo sapiens
60
            <400> 33
      Tyr Met Asn Gly Thr Met Ser Gln \Val
```

```
<210> 34
               ¢211> 9
               212> PRT
   5
               213> Homo sapiens
              <\00> 34
        Ala Phe Leu Pro Trp His Arg Leu Phe
                          5
  10
              <210> 35
              <21/1> 9
              <212> PRT
              <21$> Homo sapiens
  15
              <400|> 35
        Ser Glu Ile Trp Arg Asp Ile Asp Phe
          1
              <210> 36
              <211>√9
              <212>\PRT
              <213> Homo sapiens
 25
             <400> $6
       Tyr Glu Ile Trp Arg Asp Ile Asp Phe
             <210> 37
 30
             <211> 15
             <212> PRT
             <213> Homo sapiens
             <400> 37
 35
       Gln Asn Ile Leu Leu Ser Asn Ala Pro Leu Gly Pro Gln Phe Pro
             <210> 38
             <211> 15
 40
             <212> PRT
             <213> Homo sapiens
            <400> 38
      Asp Tyr Ser Tyr Leu dln Asp Ser Asp Pro Asp Ser Phe Gln Asp
45
            <210> 39
            <211> 10
            <212> PRT
50
            <213> Homo sapiens
            <400> 39
      Glu Ala Ala Gly Ile Gly I
                                            10
55
            <210> 40
            <211> 9
            <212> PRT
            <213> Homo sapiens
60
            <400> 40
     Ala Ala Gly Ile Gly Ile Leu Thr Val
```

```
5
              k210> 41
               211> 9
   5
              ♦212> PRT
              <213> Homo sapiens
              <4\pu0> 41
        Ile Leu thr Val Ile Leu Gly Val Leu
  10
              <210 > 42
              <211 9
              <212 PRT
              <213> Homo sapiens
              <400>\42
       Lys Thr Trp Gly Gln Tyr Trp Gln Val
 20
             <210> 43
             <211> 9
             <212> PRT
             <213> Homo sapiens
 25
             <400> 43
       Ile Thr Asp Glm Val Pro Phe Ser Val
             <210> 44
             <211> 9
             <212> PRT
             <213> Homo
                        sapiens
 35
             <400> 44
      Tyr Leu Glu Pro Gly Pro Val Thr Ala
           ` <210> 45
40
            <211> 10
            <212> PRT
            <213> Homo sapiens
            <400> 45
      Leu Leu Asp Gly Thr Ala Thr Leu Arg Leu
45
        1
            <210> 46
            <211> 10
50
            <212> PRT
            <213> Homo sapien
            <400> 46
      Val Leu Tyr Arg Tyr Gly $er Phe Ser Val
55
                                             10
            <210> 47
            <211> 9
            <212> PRT
60
            <213> Homo sapiens
            <400> 47
```

```
Leu Tyr Val Asp Ser Leu Phe Phe Leu
                K210> 48
     5
                ¢211> 12
                4212> PRT
                <213> Homo sapiens
                <400> 48
         Lys Ile ter Gly Gly Pro Arg Ile Ser Tyr Pro Leu
    10
                <210> 49
               <211 9
   15
               <212 > PRT
               <213>\Homo sapiens
               <400> \\ 49
         Tyr Met Asp day Thr Met Ser Gln Val
   20
                           5
               <210>50
               <211> 11
               <212> PRT
  25
              <213> Homb sapiens
              <400> 50
        Ser Leu Leu Met Trp Ile Thr Gln Cys Phe Leu
  30
              <210> 51
              <211> 9
              <212> PRT
              <213> Homo sapiens
 35
              <400> 51
       Ser Leu Leu Met Trp Ite Thr Gln Cys
 40
             <210> 52
             <211> 9
             <212> PRT
             <213> Homo sapiens
 45
             <400> 52
      Gln Leu Ser Leu Leu Met Trp\lle Thr
        1
             <210> 53
50
            <211> 10
            <212> PRT
            <213> Homo sapiens
            <400> 53
55
      Xaa Glu Ala Asp Pro Thr Gly His Ser Tyr
       1
            <210> 54
            <211> 945
60
            <212> DNA
            <213> Homo sapiens
```

. •

	<400>\ 54
5	agccaatect atgaggaete cagcaaceaa gaagaggagg ggccaageae ettecetgae
10	ctcctcaagt atcgagccag ggagccggtc acaaaggcag aaatgctggg gagtgtcgtc ggaaattggc agtatttctt tcctgtgatc ttcagcaaag cttccagttc cttgcagctg tgcctgggc tctcctacga tggcctgctg ggtgacaatc agatcatgcc caaggcaggc ctcctgataa tcgtcgtggg
Blyd 15	gateceaaga agetgeteae ccaacattte gtgeaggaaa actaeetgga gtaeeggeag gteeceggea gtgateetge atgttatgaa tteetgtggg gteeaaggge cetegttgaa taeeceaeee tgeatgagtg ggttttgaga gagggggaag agtga
20	<210> 55 <211> 314 <212> PRT <213> Homo sapiens
25	<400> 55
23	Met Pro Leu Glu Gln Arg Ser Gln His Cys Lys Pro Glu Glu Gly Leu 1 5 10 15 Glu Ala Arg Gly Glu Ala Leu Gly Leu Val Gly Ala Gln Ala Pro Ala
30	Thr Glu Glu Glu Ala Ala Ser Ser Ser Thr Leu Val Glu Val Thr Leu Gly Glu Val Pro Ala Ala Glu Ser Pro Asp Pro Pro Gln Ser
35	Pro Gln Gly Ala Ser Ser Leu Pro Thr Thr Met Asn Tyr Pro Leu Trp 65 70 75 80 Ser Gln Ser Tyr Glu Asp Ser Ser Asn Gln Glu Glu Gly Pro Ser
40	Thr Phe Pro Asp Leu Glu Ser Glu Phe Gln Ala Ala Leu Ser Arg Lys 100 Val Ala Glu Leu Val His Phe Leu Leu Lys Tyr Arg Ala Arg Glu 115
45	Pro Val Thr Lys Ala Glu Met Leu Gly Ser Val Val Gly Asn Trp Gln 130 Tyr Phe Phe Pro Val Ile Phe Ser Lys Ala Ser Ser Ser Leu Gln Leu 145 Val Phe Gly Ile Glu Leu Met Glu Val Asp Pro Ile Gly His Leu Tyr 165 Ile Phe Ala Thr Cys Leu Gly Leu Ser Tyr Aap Gly Leu Leu Gly Asp
50	Asn Gln Ile Met Pro Lys Ala Gly Leu Leu Ile Ile Val Leu Ala Ile
55	Ile Ala Arg Glu Gly Asp Cys Ala Pro Glu Glu Ivs Ile Trp Glu Glu 210 Leu Ser Val Leu Glu Val Phe Glu Gly Arg Glu Asp Ser Ile Leu Gly 230 Asp Pro Lys Lys Leu Leu Thr Gln His Phe Val Gln Glu Asn Tyr Leu 240 Cly Try Arg Clu Asn Tyr Leu
60	Glu Tyr Arg Gln Val Pro Gly Ser Asp Pro Ala Cys Tyr Glu Phe Leu 260 Trp Gly Pro Arg Ala Leu Val Glu Thr Ser Tyr Val Lys Val Leu His
	His Met Val Lys Ile Ser Gly Gly Pro His Ile Ser Tyr Pro Pro Leu

```
290
                                295
                                                     300
       His Glu Trp Val Leu Arg Glu Gly Glu Glu
       305
                            310
  5
             <210>\ 56
             <211>\9
             <212> PRT
             <213> Homo sapiens
 10
             <400> 56\
       Glu Val Asp Pro\lle Gly His Leu Tyr
             <210> 57
             <211> 16
             <212> PRT
             <213> Homo sapiens
             <400> 57
20
      Met Glu Val Asp Pro Ite Gly His Leu Tyr Ile Phe Ala Thr Cys Leu
            <210> 58
            <211> 9
25
            <212> PRT
            <213> Homo sapiens
            <400> 58
      Asp Pro Ile Gly His Leu Tyr \tag{le Phe
30
            <210> 59
            <211> 10
            <212> PRT
35
            <213> Homo sapiens
            <400> 59
     Met Glu Val Asp Pro Ile Gly His Leu Tyr
                      5
40
```

•